We claim:

1. A method for identifying an antibody to a target protein from a plurality of antibodies, comprising

    i. providing antibodies, wherein at least one antibody binds specifically to a fusion protein comprising at least a portion of a target protein linked to a carrier protein;

    ii. linking at least some of the antibodies to a solid surface to obtain a solid surface coated with antibodies, wherein different antibodies are located on different areas of the solid surface;

    iii. contacting the solid surface coated with antibodies with the fusion protein; and

    iv. conducting an assay to determine the presence of the carrier protein, wherein the presence of a carrier protein indicates the presence of an antibody to the target protein.

2. The method of claim 1, wherein the target protein comprises an isoform of a protein or a portion thereof sufficient for raising an antibody against it.

3. The method of claim 2, wherein the isoform of the protein is an isoform of a protein that is associated with a disease.

4. The method of claim 1, wherein the target protein comprises a viral protein or a portion thereof sufficient for raising an antibody against it.

5. The method of claim 1, wherein the carrier protein comprises secretory alkaline phosphatase (SEAP) or a portion thereof sufficient for enzymatic activity.

6. The method of claim 1, wherein the carrier protein comprises horseradish peroxidase or a portion thereof sufficient for enzymatic activity.

7. The method of claim 1, wherein the carrier protein comprises beta-galactosidase or a portion thereof sufficient for enzymatic activity.

8. The method of claim 1, wherein the carrier protein comprises luciferase or a portion thereof sufficient for enzymatic activity.

9. The method of claim 1, wherein the carrier protein comprises IgG Fc (gamma chain).

10. The method of claim 1, wherein the antibodies are linked to a solid surface comprising Protein A Sepharose.

11. The method of claim 1, wherein the antibodies are linked to a solid surface comprising Protein G Sepharose.

12. The method of claim 1, wherein the assay used to determine the presence of the carrier protein is a chemiluminescence assay.

13. The method of claim 1, wherein the assay used to determine the presence of the carrier protein is a fluorescence assay.

14. The method of claim 1, wherein the assay used to determine the presence of the carrier protein is a colorimetric assay.

15. The method of claim 1, further comprising a wash step between steps (iii) and (iv) to remove unbound fusion protein.

16. A method for generating a plurality of monoclonal antibodies, wherein each monoclonal antibody binds to a target protein, comprising

    i. administering to a host a plurality of fusion proteins or nucleic acids encoding fusion proteins, wherein each fusion protein comprises at least a portion of a target protein and a carrier protein;

    ii. preparing a plurality of monoclonal antibody producing cells obtained from cells from the host; and

    iii. screening the cells according to the method of claim 1, to obtain a plurality of monoclonal antibodies against the target proteins.

17. The method of claim 16, wherein the target protein comprises an isoform of a protein or a portion thereof sufficient for raising an antibody against it.

18. The method of claim 16, wherein the isoform of the protein is associated with a disease or a portion thereof sufficient for raising an antibody against it.

19. The method of claim 16, wherein the target protein comprises a viral protein or a portion thereof sufficient for raising an antibody against it.

20. The method of claim 16, wherein the carrier protein comprises secretory alkaline phosphatase (SEAP) or a portion thereof sufficient for enzymatic activity.

21. The method of claim 16, wherein the carrier protein comprises horseradish peroxidase or a portion thereof sufficient for enzymatic activity.

22. The method of claim 16, wherein the carrier protein comprises beta-galactosidase or a portion thereof sufficient for enzymatic activity.

23. The method of claim 16, wherein the carrier protein comprises luciferase or a portion thereof sufficient for enzymatic activity.

24. The method of claim 16, wherein the carrier protein comprises IgG Fc (gamma chain).

25. The method of claim 16, wherein the host is a mouse.

26. The method of claim 16, wherein the plurality is at least 3.

27. The method of claim 16, wherein the plurality is at least 10.

28. The method of claim 16, wherein the plurality is at least 100.

29. The method of claim 16, wherein the plurality is at least 1000.

30. The method of claim 16, wherein the nucleic acid is an expression vector.

31. A method for generating a plurality of monoclonal antibodies, wherein at least one monoclonal antibody binds to an isoform of a protein that is associated with a disease, comprising

i. administering to a host a plurality of fusion proteins or nucleic acids encoding fusion proteins, wherein each fusion protein comprises at least a portion of an isoform of a protein that is associated with a disease and a carrier protein;

ii. preparing a plurality of monoclonal antibody producing cells from spleen cells obtained from the host; and

iii. screening the cells according to the method of claim 1, to obtain at least one monoclonal antibody that binds to an isoform of a protein that is associated with a disease.

32. The method of claim 31, wherein at least one fusion protein comprises vascular endothelial growth factor isoform 165 (VEGF165) peptide D R A R Q E N P C G P C S E (SEQ ID NO: 2).

33. The method of claim 31, wherein at least one fusion protein comprises vascular endothelial growth factor isoform 121 (VEGF121) peptide D R A R Q E K C D K P R R (SEQ ID NO: 4).

34. The method of claim 31, wherein at least one fusion protein comprises HER-2 splice isoform 1peptide INCTHS/PLTS (SEQ ID NO: 6).

35. The method of claim 31, wherein at least one fusion protein comprises HER-2 splice isoform 2 peptide CTHSCV/ASPLT (SEQ ID NO: 8).

36. The method of claim 31, wherein the carrier protein comprises secretory alkaline phosphatase (SEAP) or a portion thereof sufficient for enzymatic activity.

37. The method of claim 31, wherein the carrier protein comprises horseradish peroxidase or a portion thereof sufficient for enzymatic activity.

38. The method of claim 31, wherein the carrier protein comprises beta-galactosidase or a portion thereof sufficient for enzymatic activity.

39. The method of claim 31, wherein the carrier protein comprises luciferase or a portion thereof sufficient for enzymatic activity.

40. The method of claim 31, wherein the carrier protein comprises IgG Fc (gamma chain).

41. The method of claim 31, wherein the host is a mouse.

42. The method of claim 31, wherein the plurality is at least 3.

43. The method of claim 31, wherein the plurality is at least 10.

44. The method of claim 31, wherein the plurality is at least 100.

45. The method of claim 31, wherein the plurality is at least 1000.

46. The method of claim 31, wherein the nucleic acid is an expression vector.

47. A method for isolating an antibody binding specifically to a target protein from a plurality of antibodies that are associated with the nucleic acid(s) encoding the antibody, comprising

    i. linking at least a portion of a target protein to a pin on a solid surface to obtain a pin coated with the protein;

    ii. contacting the pin coated with the protein with a plurality of antibodies associated with the nucleic acid(s) encoding the antibody under conditions appropriate for antibody/antigen complexes to form; and

    iii. isolating an antibody that is attached to the pin, to thereby isolate an antibody to a target protein.

48. The method of claim 47, wherein antibodies associated with the nucleic acid(s) encoding the antibody are phages.

49. The method of claim 47, further comprising detaching the antibody from the pin.

50. The method of claim 47, further comprising a wash step between steps (ii) and (iii).

51. The method of claim 47, wherein a plurality of proteins are linked to a plurality of pins, wherein different proteins are linked to different pins.

52. The method of claim 47, wherein the solid surface comprises at least 10 pins.

53. The method of claim 47, wherein the solid surface comprises at least 100 pins.

54. The method of claim 47, wherein the solid surface comprises at least 1000 pins.

55. The method of claim 47, wherein the at least a portion of a target protein is associated with keyhole limpet hemacyanin (KLH).

56. The method of claim 47, wherein the at least a portion of a target protein is associated with secretory alkaline phosphatase (SEAP).

57. The method of claim 47, wherein the at least a portion of a target protein is associated with IgG Fc (gamma chain).

58. The method of claim 47, wherein the at least a portion of a target protein is associated with Glutathione-S-Transferase (GST).

59. The method of claim 47, wherein the at least a portion of a target protein is associated with a polyhistidine containing tag.

60. The method of claim 47, wherein the solid surface comprises biotin or streptavidin.

61. The method of claim 47, wherein the solid surface comprises nickel.

62. The method of claim 47, wherein the solid surface comprises gluthathione.

63. A method for determining the presence of an antigen in a sample, comprising

(i) contacting a sample with a solid surface comprising a plurality of antibodies located at specific locations on the solid surface under conditions in which antigen/antibody complexes form specifically;

(ii) further contacting the solid surface with a plurality of fusion proteins, wherein each fusion protein comprises a polypeptide that binds specifically to an antibody on the solid surface and a carrier protein, under conditions in which antigen/antibody complexes form specifically; and

(iii) detecting the presence of the carrier protein at each specific location on the solid surface, wherein the absence of the carrier protein at a specific location indicates the presence of antigen binding specifically to the antibody located at the specific location, thereby indicating the presence of the antigen in the sample.

64. The method of claim 63, wherein the solid surface comprises at least about 100 antibodies.

65. The method of claim 63, wherein the solid surface comprises at least about 1000 antibodies.

66. The method of claim 63, wherein the solid surface is an antibody array, wherein each antibody is located at a specific address on the array.

67. The method of claim 63, wherein the carrier protein is an enzyme or a portion thereof sufficient for enzymatic activity and the method further comprises contacting the solid surface with a substrate of the enzyme.

68. A method for identifying an epitope on a target protein, comprising

(i) providing nucleic acids encoding a plurality of fusion proteins, wherein each fusion protein comprises a peptide of 6 to 15 amino acids of the target protein and a carrier protein, and wherein the peptides comprise different sequences of the target protein;

(ii) administrating the plurality of fusion proteins to an animal host;

(iii) obtaining serum from the host; and

(iv) determining the presence and/or the amount of antibodies against the peptides of the target protein in the serum according to the method of claim 1, wherein the presence of an antibody to a peptide indicates that the peptide corresponds to an epitope on the target protein.

69. The method of claim 68, wherein the peptides comprise staggered sequences of the target protein.

70. The method of claim 68, wherein the protein is a cell surface receptor and the fusion proteins comprise amino acid sequences located in the extracellular domain of the receptor.

71. A method for identifying an epitope on a target protein, comprising

(i) providing nucleic acids encoding a plurality of fusion proteins, wherein each fusion protein comprises a peptide of 6 to 15 amino acids of the target protein and a carrier protein, and wherein the peptides comprise different sequences of the target protein;

(ii) administrating the plurality of fusion proteins to an animal host;

(iii) preparing a plurality of monoclonal antibody producing cells obtained from cells from the host; and

(iv) screening the cells according to the method of claim 1 to identify antibodies to the target protein, wherein the presence of an antibody to a peptide indicates that the peptide corresponds to an epitope on the target protein.

72. A method for preparing a DNA vaccine against a disease, comprising

(i) identifying one or more epitopes of a protein associated with the disease according to the method of claim 68; and

(ii) including nucleotide sequences encoding one or more epitopes into an expression vector, to thereby prepare a DNA vaccine against a disease.

73. A method for preparing a vaccine against a disease, comprising

(i) identifying one or more epitopes of a protein associated with the disease according to the method of claim 68; and

(ii) preparing peptides comprising an amino acid sequences of one or more epitopes, to thereby prepare a vaccine against a disease.

74. An expression vector comprising a nucleotide sequence encoding a peptide consisting essentially of SEQ ID NO: 2, 4, 6, 8, 10 or 11.

75. The expression vector of claim 74, further comprising a nucleotide sequence encoding a carrier protein.